

Claims

1. An Internet protocol-private branch exchange having an instant messenger function, the Internet protocol-private
5 branch exchange comprising:

a private branch exchange unit for performing transmission/reception of voice and data among an office line telephone, an extension telephone, a computer and a wired/wireless Internet terminal after being connected to a
10 public switched telephone network, an extension network and an Internet protocol network;

a messenger server unit for transmitting/receiving an instant message, a file and an e-mail by using instant messenger software executed in the computer and/or the
15 wired/wireless Internet terminal after being connected to the computer and the wired/wireless Internet terminal, and providing and managing at least one of the functions of providing information for current status, position or address book of connected users and notifying reception of
20 the e-mail by executing the instant messenger software; and

a central controller for providing an inter-working function between the PBX unit and the messenger server unit, and temporarily holding provision of an instant messenger service and controlling a voice communication service to be
25 provided between communication terminals requiring voice communication when a voice communication service request

signal is received through the instant messenger software while the instant messenger service is being provided through the messenger server unit.

5 2. The Internet protocol-private branch exchange as claimed in claim 1, wherein the private branch exchange unit includes:

10 a public switch module for performing an office line incoming function of matching with the public switched telephone network and establishing a communication channel with an office line terminal, an office line outgoing function of analyzing an office line number and transmitting the office line number through a dual tone multi frequency, and a communication line status monitoring function of
15 releasing the communication channel when voice communication is ended;

20 a subscriber switch module for matching with the extension network, analyzing dual tone multi frequency signals inputted from an extension telephone, setting a communication call to a corresponding extension telephone, and connecting or releasing a communication call connected from the public switch module;

25 a VoIP (Voice over Internet Protocol) switch module for modulating analog voice signals, which have been received from the public switch module and the subscriber switch module, into digital signals by means of VoIP

technology so order to transmit the digital signals through the Internet protocol network; and

5 a switch controller for respectively controlling the public switch module, the subscriber switch module and the VoIP switch module, allocating a communication channel and transmitting/receiving various data through the allocated communication channel.

10 3. The Internet protocol-private branch exchange as claimed in claim 2, wherein the private branch exchange unit performs a voice communication function through the Internet protocol network by means of at least one VoIP protocol of a H.323, a session initiation protocol, a media gateway control protocol and a MEGACO (MEdia Gateway COntrol).

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4. The Internet protocol-private branch exchange as claimed in claim 1, wherein the messenger server unit includes:

20 a web server unit for constructing and managing a wired website or a wireless website by means of at least one script language of a Professional HyperText Preprocessor, a perl and an active server page;

25 a database server unit for storing personal information including an ID, a password, an e-mail address and a wired/wireless telephone number of a user registered in the web server unit as a member, and performing a

function of authenticating members, managing a website, managing a list of communication partners according to each member, and managing a current status according to each member through inter-working with the web server unit; and

5 a messenger module unit for providing the instant messenger service to at least one communication terminal under a control of the central controller.

10 5. The Internet protocol-private branch exchange as claimed in claim 4, wherein the communication terminal using the instant messenger service through the messenger module unit is a terminal having a display unit for displaying data transmitted/received through the instant messenger service, and includes at least one of a wired/wireless computer and a
15 wired/wireless Internet terminal which are connected to an Internet or an office line network.

6. An Internet terminal having an instant messenger function, the Internet terminal comprising:

20 a program storage unit for storing at least one operation system and instant messenger software;

 a display unit for displaying data including an instant message transmitted/received through the instant messenger software;

25 a data input unit for inputting an execution command or an execution end command of the instant messenger

software or inputting data to be transmitted through the executed instant messenger software;

a network interface card for transmitting the data inputted through the executed instant messenger software or receiving data transmitted through a communication network;

a VoIP (Voice over Internet Protocol) chip for encoding or decoding voice data or image data transmitted or received through the communication network, transmitting or reproducing the encoded or decoded data, processing a dual tone multi frequency, and removing echo; and

a microprocessor for providing voice communication, data transmission and an instant messenger service, and temporarily holding the instant messenger service being provided and generating/transmitting a voice communication request signal when a key value for a voice communication request is inputted while the instant messenger service is being provided.

7. The Internet terminal as claimed in claim 6, wherein the instant messenger software provides at least one of a function of checking whether a communication partner is in an online status, a function of providing a current status of the communication partner, a function of transmitting/receiving data, a function of providing voice communication using VoIP technology, a function of transmitting/receiving the instant message, a function of

notifying an e-mail reception, a function of authenticating a user, and a function of providing a video chatting.

8. The Internet terminal as claimed in claim 6,
5 wherein the VoIP chip stores at least one VoIP protocol of a H.323, a session initiation protocol, a media gateway control protocol and a MEGACO (MEdia GAteway COntrol).

9. The Internet terminal as claimed in claim 6,
10 wherein the network interface card includes at least one of a wireless local area network card for wireless local area network communication and a wired local area network card for wired local area network communication.

15 10. An instant messenger service system for providing an instant messenger service by means of an Internet protocol-private branch exchange having an instant messenger function, the instant messenger service system comprising:

at least one communication terminal for storing at
20 least one instant messenger software, and using the instant messenger service through wired local area network communication and/or wireless local area network communication;

a communication network being connected to the
25 communication terminal, for supporting the wired local area network communication and/or the wireless local area network

communication; and

the Internet protocol-private branch exchange for providing the instant messenger service and a voice communication service between the communication terminals after being connected to the communication network, and providing the voice communication service by means of VoIP (Voice over Internet Protocol) technology when a request of the voice communication service is received from a specific communication terminal receiving the instant messenger service.

11. The instant messenger service system as claimed in claim 10, wherein the communication terminal includes at least one of a wired Internet terminal, a wireless Internet terminal, an Internet terminal for both wired and wireless communication, a personal digital assistant and a computer.

12. The instant messenger service system as claimed in claim 10 or 11, wherein the communication network includes an access point, a hub and an Internet protocol network when the communication terminal includes at least one of the wireless Internet terminal, the Internet terminal for both wired and wireless communication and the personal digital assistant, and the communication network includes the Internet protocol network or a public switched telephone network when the communication terminal includes at least

one of the wired Internet terminal, the Internet terminal for both wired and wireless communication and the computer.

13. The instant messenger service system as claimed in
5 claim 10, wherein the Internet protocol-private branch
exchange includes a private branch exchange unit and a
messenger server unit in order to perform a function of
checking whether a communication partner is in an online
status, providing a current status of the communication
10 partner, transmitting/receiving data, providing voice
communication using VoIP technology, transmitting/receiving
an instant message, notifying an e-mail reception,
authenticating a user, and providing a video chatting, the
private branch exchange unit including a public switch
15 module, a subscriber switch module, a VoIP switch module and
a switch controller, the messenger server unit including a
web server unit, a database server unit and a messenger
module unit.

20 14. The instant messenger service system as claimed in
claim 10, wherein the Internet protocol-private branch
exchange acquires and provides position information of each
communication terminal by means of each media access control
address information stored in wired local area network
25 communication cards and/or wireless local area network
communication cards installed in a wired Internet terminal,

a wireless Internet terminal, an Internet terminal for both wired and wireless communication, a personal digital assistant and a computer.

5 15. The instant messenger service system as claimed in claim 10, wherein the Internet protocol-private branch exchange stores at least one VoIP protocol of a H.323, a session initiation protocol, a media gateway control protocol and a MEGACO (MEdia GAteway COntrol), and provides
10 a VoIP voice communication service to each communication terminal.